

## **ABSTRACT**

A method and system for the wireless radio-frequency (RF) transmission and reception of an audio signal use a substantially oversampled and low bit-weight digital word representation. An analog electrical signal, representing acoustic audio information, is digitized with a high-precision delta-sigma modulator without corresponding decimating lowpass filter. The delta-sigma modulator output is a sequence of single bit words. Each bit is unweighted or equally weighted. The words are generated at a frequency that substantially exceeds the critical (Nyquist) sampling frequency, so that the signal is substantially oversampled. The oversampled and low bit-weight digital word representation minimizes the complexity and power consumption of analog-to-digital conversion, which facilitates mobile or portable use with long battery life. The corresponding digital decimating lowpass filter is implemented in the receiver system, when necessary.